Application No. 10/716,190
Filed: November 18, 2003
TC Art Unit: 1732
Confirmation No.: 4133

REMARKS

Claims 1-10 are currently pending. Claims 1-5 and claims 9 and 10 have been rejected under 35 U.S.C. § 102(b). Claims 7 and 8 have been rejected under 35 U.S.C. § 103(a). Claim 6 has been rejected further under 35 U.S.C. § 112, first paragraph. Claims 1 and 6 have been amended. The Applicants respectfully traverse the grounds for rejection based on the above amendments and the following reasons.

SECTION 112, FIRST PARAGRAPH REJECTIONS

Claim 6 has been rejected under 35 U.S.C. § 112, first paragraph as failing to comply with the enablement requirement. Claim 6 has been amended to remove reference to the addition of carbon nanotube to the resin. Accordingly, the Applicants believe that the grounds for rejection are moot and the claim is in condition for allowance.

SECTION 102(b) REJECTIONS

Claims 1-5 and claims 9 and 10 have been rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent Application Publication Number 2002/0132075 to Friend, et al. ("Friend I") and/or as anticipated by Patent Number 6,464,908 to Friend, et al. ("Friend II"). The Applicants respectfully traverse these rejections for the reasons provided below.

Independent claim 1 recites a method for controlling a thickness of a skin layer on a composite product having the skin layer and a core layer. The method includes adding a carbon

nanomaterial to either a first thermoplastic resin or a second thermoplastic resin to cause or increase a difference in viscosity between the resins; and injection molding both resins into a mold to produce a composite product so as to control the thickness of the skin layer by the difference in viscosity between the two resins.

Furthermore, according to the specification:

> The first resin, which is decreased in viscosity by adding the carbon nanomaterial thereto, is pressed and stretched by the resin pressure of the second resin, **so that the thickness of the skin layer is formed thinner or thicker.**

Specification, page 7, lines 28-31. Moreover, per the specification:

> it is also possible to **control the thickness of the skin layer by lowering the viscosity of the second resin by similar means.**

Specification, page 7, line 34 to page 8, line 6 (Emphasis added).

Thus, the invention as claimed recites a method of controlling the thickness of a skin layer by introducing a carbon nanomaterial into either of the resins comprising the skin layer or the core layer. More specifically, the present invention recites injection molding the resins to control the thickness of the skin layer by said difference in viscosity. The Friend references do not teach, mention or suggest controlling the thickness of the skin layer by adding a carbon nanomaterial to create a viscosity difference between two layers.

Indeed, although, Publication Number 2002/0132075 (Friend I) discloses mixing different concentrations of carbon fibrils with a

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first layer and a second layer of polymeric material, the disclosed purpose for the different concentrations is to provide polymeric layers with different surface resistances/conductivities to protect integrated circuits from excess current. See, e.g., Friend, para. 0039. Injection molding is not done to control the thickness of the outer, skin layer as specified in claim 1.

The Friend II reference also discloses providing different concentrations to provide polymeric layers with different surface resistances/conductivities to protect integrated circuits from excess current.

Accordingly, the Applicants maintain that the Friend references do not anticipate claims 1-3 under 35 U.S.C. § 102(b) and the rejections should be withdrawn.

SECTION 103(a) REJECTIONS

The Examiner has also rejected claims 7 and 8 under 35 U.S.C. § 103(a) as unpatentable over Friend I in view of U.S. Patent Number 6,382,763 to Albuquerque ("Albuquerque"). The Applicants respectfully traverse these rejections for the reasons provided below.

The shortcomings of the Friend references have already been discussed. Nor can the Albuquerque reference make up for the deficiencies of the Friend references. Particularly, Albuquerque does not teach, mention or suggest controlling the thickness of a skin layer by introducing a carbon nanomaterial into either of the resins comprising the skin layer or the core layer. More specifically, Albuquerque does not teach, mention or suggest injection molding the resins to control the thickness of the skin layer by said difference in viscosity.

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Accordingly, the Applicants believe that claims 7 and 8 are in condition for allowance and the rejections should be withdrawn.

The Examiner is encouraged to telephone the undersigned attorney to discuss any matter that would expedite allowance of the present application.

Respectfully submitted,

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